January 6, 2017

Attn: Forest Plan Revision,
Custer Gallatin National Forest,
10 E Babcock, P.O. Box 130,
Bozeman, MT 59771

Dear Forest Plan Revision Team;

Please accept these comments from me on the Draft Assessment of Existing Conditions and Draft Preliminary Need to Change document on behalf of the Alliance for the Wild Rockies and Native Ecosystems Council.

Please include in the revised Forest Plan habitat standards to meet the primary constituent elements for native fish such as:

(1) Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.

(3) An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.

(5) Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.

(6) In spawning and rearing areas, substrate of sufficient amount, size, and composition
to ensure success of egg and embryo overwinter survival, fry emergence, and young-ofthe- year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates, is characteristic of these conditions. The size and amounts of fine sediment suitable to bull trout will likely vary from system to system.

(7) A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, minimal flow departure from a natural hydrograph.

(8) Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.

(9) Sufficiently low levels of occurrence of nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are adequately temporally and spatially isolated from native fish.

Activities that alter the quantity, timing or quality of water resources have the greatest potential for adverse effects, and the risk of adverse effects generally decreases as the distance away from streams or wetlands increases.

The current Forest Plan relies on Best Management Practices and forest plan standards and guidelines to minimize or eliminate the adverse effects. These are the same BMPs that have failed to protect watersheds and fish habitat over the past years. These are the standards and guidelines that are weakened from the current Forest Plan that failed to protect watersheds and fish habitat. And on top of that the Custer Gallatin does not have the budget to maintain its existing road system.

Please analyze an alternative that includes standards and guidelines that actually conserve and recover native fish, improve water quality so watersheds are no longer impaired on the 303(d) list or reduce road densities so they are not degrading water quality and fish habitat.

The Clean Water Act and Best Management Practices

The Clean Water Act requires that federal agencies protect water quality and comply with state water quality standards on National Forest system lands. Marble Mountain Audubon Soc. v. Rice, 914 F.2d 179, 182 (9th Cir. 1990); Oregon Natural Resources Council v. U.S. Forest Service, 834 F.2d 842, 848 (9th Cir. 1987); Northwest Indian Cemetery Protective Ass'n v. Peterson, 794 F.2d 688, 697 (9th Cir. 1987); 33 U.S.C. 1323(a) ("Each department, agency, or instrumentality of the executive [branch] . . . shall be subject to, and comply with, all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution"); 16 U.S.C. 1604(g)(3)(E)(iii) (timber may be harvested only where "protection is provided for streams, streambanks shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment"); 36 C.F.R. 219.23(d) ("Forest Planning shall provide for -- Compliance with requirements of the Clean Water Act, the Safe Drinking Water Act, and all substantive and procedural requirements of Federal, State and local governmental bodies") and 36 C.F.R. 219.27(a)(4) ("All management prescriptions shall . . . Protect streams, streambanks, shorelines, lakes, wetlands and other bodies of water").

Despite all these promises, native fish populations are in steady decline, including threatened bull trout. On the Custer Gallatin listed impaired segments are not meeting state water quality standards or failing to meet designated uses due to identified, and preventable, man-made causes.

While some TMDLs have been completed, they languish because there is no time mandated to accomplish TMDL goals, or meet state water quality standards.

State and federal agencies rely on Best Management Practices (BMPs) to mitigate impacts of erosion, sediment overloads, and increase nutrients to comply with the Clean Water Act and state of Montana regulations. BMPs have proven to be an ineffective means of mitigating the effects of logging. BMPs have failed to protect water quality. BMPs are a significant threat to bull
trout and native fish because they are not preventing degradation.

The Forest Service routinely fail to monitor the effectiveness of BMPs. Failed monitoring implementation leads directly to agency ignorance of effects of management-induced sediment on bull trout. Without proper monitoring it is impossible to evaluate the cumulative effects of repeatedly relying on the untested and unmonitored effectiveness of the BMPs.

BMPs fail to protect and improve water quality because of the allowance for "naturally occurring degradation." In Montana, "naturally-occurring degradation" is defined in ARM 16.20.603(11) as that which occurs after application of "all reasonable land, soil and water conservation practices have been applied." In other words, damage caused directly by sediment (and other

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pollution) is acceptable as long as BMPs are applied. The result is a never-ending, downward spiral for water quality and native fish.

Here's how it works:

- Timber sale #1 generates sediment damage to a bull trout stream, which is "acceptable" as long as BMPs are applied to project activities.
- "Natural" is then redefined as the stream condition after sediment damage caused by Timber Sale #1.
- Timber sale #2 – in the same watershed – sediment damage would be acceptable if BMPs are applied again – same as was done before.
- "Natural" is again redefined as the stream condition after sediment damage caused by Timber Sale#2.

The downward spiral continues with disastrous cumulative effects on native fish and most aquatic life. BMPs are not "reasonable." Clearly, beneficial uses are not being protected. In Montana, state water quality policy is not being followed. § 75-5-101 et seq. and ARM 16.20.701 et seq. Reliance on BMPs does not represent a reasonable "road map to recovery." 50 CFR 402.02.

BMPs cannot be trusted as criteria to protect water quality and fish habitat when the Custer Gallatin does not have the budget to maintain its road system.

HABITAT

Please consider a management strategies in the revised Forest Plan that reflect the role of fire, insects and other natural processes on the landscape. Management is based on how humans interpret nature, however, we don't know what trees contain the genetic adaptations necessary to survive in a changing climate. As an example, the Flathead Draft Revised Forest Plan shows a computer- generated representation of habitat connectivity that is neat and tidy on paper, it is all based on how much of the landscape can be manipulated through logging and thinning – a sort of if you log it the wildlife will use it. What happens if there is a fire that enlarges the man-made openings? What happens if you've logged the trees that contain the genetic diversity needed to resist bark beetles or disease? What happens when you remove the disease processes that add diversity to the forest that wildlife evolved with? Missing from these potential strategies is allowing the forest and wildlife to adapt their own resilience to stochastic events that are not predictable in time or space. The potential strategies are all based on how much can be logged, not what does wildlife need.

Please consider the new emerging science regarding thinning and mountain pine beetle by Six, et al. Management for Mountain Pine Beetle Outbreak Suppression: Does Relevant Science Support Current Policy? Following are excerpts:

“The on-the-ground reality is that direct control efforts typically fall far below the levels needed to stabilize, let alone control, mountain pine beetle populations. In the above cited studies, rates of detection in mitigated stands ranged from 45%–79%. These situations are not unusual. Direct control treatments are laborious, extremely costly and time consuming, and require high levels of training. Logistical difficulties, including proper seasonal timing, access, inclement weather, and lack of trained personnel, increase the odds that they will not be effective. The high financial cost of such efforts coupled with a volatile market for sawtimber, pulp and pellets further complicates the use of direct controls. Importantly, outbreak development is extremely swift and the amount of mitigation required can rapidly outstrip the ability of managers to respond.

The hypothesis that light has a strong effect on mountain pine beetle behavior, particularly in reducing attacks, has led to a new treatment called daylighting. This approach is currently being implemented on a broad scale by federal and western state agencies. Daylighting involves removing trees and vegetation from around trees that are targeted for retention and is believed to work by repelling beetles from the boles of trees by increasing light and solar radiation. While widely recommended, the efficacy of this treatment is unknown; there are no published studies on its effects on bark beetles.

Studies conducted during outbreaks indicate that thinning can fail to protect stands. In Colorado, thinning treatments in lodgepole pine implemented in response to the outbreak that began in the 90s often only slowed the spread. Klenner and Arsenault reported high levels of mortality due to the mountain pine beetle across a wide range of stands densities in lodgepole pine in British Columbia during the same outbreak. They noted that silvicultural treatments were largely ineffective in reducing damage to the beetle. Preisler and Mitchell found that once beetles invaded a thinned stand the probability of trees being killed there can be greater than in unthinned stands and that larger spacings between trees in thinned stands did not reduce the likelihood of more trees being attacked.

Unfortunately, long-term replicated studies monitoring beetle responses to thinned forests from non-outbreak to outbreak to post-outbreak phase are virtually non-existent. One large fully- replicated long-term study was initiated in 1999 under non-outbreak conditions and continues to track beetle activity. In this study, mountain pine beetle was low in all treatments in the period leading up to the outbreak, but increased in some controls and burn treatment replicates as the outbreak developed. Although more trees were killed overall in control units during the outbreak, all controls still retained a greater number of residual mature trees than did thinned stands as they entered the post-outbreak phase. Two factors contribute substantially to our inability to assess how well thinning performs under outbreak conditions. One, very few thinning treatments are monitored after implementation over either the short- or the long-term. Thus, for the vast majority of stands that have been treated, we have no data on how well they perform once an outbreak of the insect initiates (or for that matter, even under non-outbreak conditions). Second, stands that become infested, thinned or otherwise, are often targeted for intensive suppressive management and are cut without assessment or data collection. This even includes studies and sites that are intended to inform management.

These studies highlight a seldom considered impact of mountain pine beetle- that it can act as a natural thinning agent and seldom removes all mature trees during outbreaks. These effects are an important part of the ecological role that the beetle plays in western pine forests

It is also important to recognize there can be significant differences in long-term forest trajectories for stands thinned by beetles vs. those thinned by humans. When humans thin, they select for particular size classes, often favoring the retention of larger, older trees, selecting toward one desired tree species, and often 'thinning from below' which removes advanced regeneration (small trees). Thinning prescriptions also typically call for relatively even spacing between residual trees. Mountain pine beetle, on the other hand, often selects the largest trees during outbreaks (with exceptions; which can lower the mean diameter of the stand.

However, beetles often leave sufficient numbers of large diameter trees to maintain a dominant overstory of pine. Beetles also leave substantial amounts of advanced regeneration to replace the mature trees that are killed. Spacing among trees after an outbreak is uneven, resulting in a clumpy network of living trees. Patches where all trees are killed are seldom extensive and add to a mosaic structure as forests recover post-outbreak. Heterogeneous stand and mosaic forest structures are more typical of natural conditions and can support greater biodiversity and resilience against fire and subsequent beetle outbreaks. In contrast, intensive thinning treatments by humans typically favors the retention of mature pines. Over time, these pine- dominated stands grow, they are predicted to have increased susceptibility and potential for tree mortality from future mountain pine beetle outbreaks.

Very importantly, the beetle exercises selectivity in the trees it kills. While extremely high numbers may override this selectivity, evidence is accumulating that, even under outbreak conditions, beetles choose trees that have particular qualities. Beetles commonly select trees for attack that exhibit lower growth rates, defenses, and higher water stress. While these factors can be influenced both locally and regionally by site conditions and climate, much of the variation in these properties within individual stands that affect bark beetle choice likely has a genetic basis. Outbreaks can result in strong natural selection against trees with phenotypes (and likely genotypes) favorable for the beetle and for those that possess unfavorable qualities. However, when humans thin forests, trees are removed according to size, species, and density, without consideration of genetics. Thus, trees best adapted to surviving beetle outbreaks are as likely to be removed as those that are not.

When humans thin forests, they typically manage for resistance and resilience, rather than adaptation which involves genetic change. It is very important to distinguish between resistance, resilience, and adaptation, as each have different goals and operate on different temporal scales. Resistance is a short-term holding action where we try to maintain an existing state. Approaches focusing on resistance often require massive interventions and increasing physical and financial investments over time. Such approaches may set forests up for future outbreaks and even catastrophic failure as they surpass thresholds in a warming climate. In contrast, practices that promote resilience attempt to allow forests the ability to adjust to gradual changes related to climate change and to recover after disturbance.

However, like resistance, resilience is not a long-term solution. In the long term, forests must be able to adapt to change. Adaptation involves genetic change driven by natural selection. Currently, much of forest management, including bark beetle management, focuses on resistance and resilience, mainly through direct and indirect management, respectively. However, neither approach allows for true adaptation. For long term continuity of our forests, it will be imperative to begin to incorporate this aspect of management into our approaches."

How much old-growth forest habitat is on the forest and where it is? Is it connected or enough for old-growth dependent wildlife?

Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area.
The Forest Plan must ensures the existence of viable population of species, not the theoretical possibility that the species should be present.
Please include firm standards for viable populations of MIS in the Forest for all habitat types.

Lynx

Please follow the best available science in the revised Forest Plan. The best available science for lynx is now Kosterman's masters Thesis, Correlates of Canada Lynx Reproductive Success in Northwestern Montana

Please find Kosterman attached to our previous comments. Kosternman finds that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. This contradicts the agency's assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery. Kosterman's study demonstrates that the Lynx Amendment standards are not adequate for lynx viability and recovery, as previously assumed by the Forest Service.

The NRLMD does not have any connectivity criteria. These corridors need to contain dense high canopy cover over 60%.

The NRLMD also does not have a limit on how much of a lynx home range could be in a stand initiation stage, Kosterman found it should be no more than 10-15%.

The NRLMD also doesn't specify the size of a Lynx Analysis Unit, which allows LAUs that are so large the impacts of projects are washed out. LAUs need to be re-evaluated so they reflect the home range size of female lynx, about 10,000 acres. This is especially important because the average foraging radius for lynx with kittens is only 1.3 miles.

This information needs to be fully analyzed to determine whether changes to the NRLMD need to be made.

The Northern Rockies Lynx Management Direction is inadequate to ensure conservation and recovery of lynx. The amendments fail to use the best available science on necessary lynx habitat elements, including but not limited to, failing to include standards that protect key winter habitat.

The Endangered Species Act requires the FS to insure that all management projects will not likely result in the destruction or adverse modification of critical habitat. 16 U.S.C. §1536(a)(2). Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for lynx. 74 Fed. Reg. 8644. The Northern Rockies Lynx Management Direction (NRLMD) as applied in the project violates the ESA by failing to use the best available science to insure no adverse modification of critical habitat. The NRLMD carves out exemptions from Veg Standards

S1, S2, S5, and S6. In particular, fuel treatment projects may occur in the WUI even though they will not meet standards Veg S1, S2, S5, or S6, provided they do not occur on more than 6% of lynx habitat on each National Forest. See NRLMD ROD, Attachment 1, pages 2-3. Allowing the agency to destroy or adversely modify any lynx critical habitat has the potential to appreciably reduce the conservation value of such habitat. The agency cannot simply set a cap at 6% forest- wide without looking at the individual characteristics of each LAU to determine whether the project has the potential to appreciably reduce the conservation value. The ESA requires the use of the best available science at the site-specific level. It does not allow the agencies to make a gross determination that allowing lynx critical habitat to be destroyed forest-wide while not appreciably reduce the conservation value.

The FS violated NEPA by applying the above-mentioned exception without analyzing the impacts to lynx in the individual LAUs. The revised Forest Plan must insure the viability of lynx. According to the 1982 NFMA regulations, fish and wildlife must be managed to maintain viable populations of Canada lynx in the planning area. 36 C.F.R. 219.19. The FS has not shown that lynx will be well-distributed in the planning area. The FS has not addressed how the project's adverse modification of denning and foraging habitat will impact distribution. This is important because the agency readily admits that the LAUs already contain a "relatively large percentage of unsuitable habitat." The NRLMD ROD at 40 states that:

The national forests subject to this new direction will provide habitat to maintain a viable population of lynx in the northern Rockies by maintaining the current distribution of occupied lynx habitat, and maintaining or enhancing the quality of that habitat.

The FS cannot insure species viability here without addressing the impacts to the already low amount of suitable habitat. By cutting in denning and foraging habitat, the agency will not be "maintaining or enhancing the quality of the habitat."

This revised forest plan will manage Canada lynx habitat. In order to meet the requirements of the FS/USFWS Conservation Agreement, the FS agreed to insure that all project activities are consistent with the Lynx Conservation Assessment and Strategy (LCAS) and the requirements of protecting lynx critical habitat. The FS did not do so with its project analysis. This project will adversely affect lynx critical habitat in violation of the Endangered Species Act. The BA/BE needs to be rewritten to reflect this information to determine if this revised forest plan will adversely modify proposed critical habitat for lynx and if so consult with USFWS.

The District Court of Montana ruled this year that the USFWS acted illegally when they excluded lynx habitat in the designation of critical habitat. The designation should be made based on where lynx were when they were listed in 1999. The revised Forest Plan needs to reflect this.

The revised Forest Plan must require that conservation strategies be developed for all MIS and sensitive species. This should include monitoring for species presence, not just habitat as proxy, in order to show a positive correlation between species populations and habitat.

WILDERNESS

We support recommended wilderness for all inventoried roadless areas and Wilderness Study Areas in the Forest.

Thank you for your time.

Sincerely yours,

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and for

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